FOSSIL OPERATIONS & MAINTENANCE INFORMATION SERVICE

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PLANT/COMPANY	Intermountain/Intermountain Power Services
REQUESTER/PHONE	Jeff Payne/801-864-4414
SUBJECT	Burner
ITEM	Coal Burner

DESCRIPTION Burner Life

F90-3-70

A. What is the expected life of boiler burners?

B. For those burners which do not last the life of the unit, what factors contribute to the shorter life? Intermountain

PLANT RESPONSES

The following plants have no applicable experience:
Agua Fria, Anclote, Arthur Kill, Big Cajun 2, Cayuga, Cleary, Coronado, Decker, Eckert, Genoa, Gilroy, Hatfield, Holly Street, Keystone, Merom, Muscatine, Navajo, New Madrid, North Omaha, Northside, Oak Creek, Port Everglades, Reid-Green, South Bay, Thomas Hill and Young.

AVON LAKE - The plates are changed every outage and the nozzles last 2-3 years. Problems are usually due to fires within the nozzles because it is difficult to maintain the proper windbox temperature. Contact Ralph Seeh, Manager of Operations, at 216/622-9800.

BRANDON SHORES - Has dual register burners and reports a 2-3 year life for the conical diffusers. The station has not yet replaced burner tips. Contact Phil Graziano, Plant Engineering Supervisor, at 301/787-5523.

BRIDGEPORT - The burners for the #6 oil fired units last about three years and the coal units last about five years. Corrosion caused by the oil, the cooling air flow through the registers, the metallurgy and other factors influence the length. Contact Tom Buffa, Maintenance Engineering Supervisor, at 203/368-5462.

BROWN - The burner life depends on the boiler operation and can be shortened due to slag, explosions, burner fires, wear, incorrect firing or tilts not operating properly. Contact Ralph Davis, Maintenance Coordinator at Ghent, at 502/347-5383.

COLSTRIP - Reports a two year life for burners and has an extra set which are rebuilt and maintained in stock. The primary cause of burner failure is overheating and/or erosion. Contact Mike Hills, Mechanical Engineering Supervisor, at 406/748-2780.

CONEMAUGH - Inspects the boiler burners each schedule outage and repairs or places as necessary. On average, the plant replaces one third of the burners per outage. Warpage is the main factor contributing to shorter burner life. Contact Kirk Rumbaugh, Rotating Equipment Engineer, at 412/235-2711.

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CRAIG - For discussion, contact Gary Crisp, Plant Engineer, at 303/824-4411.

CROMBY - B&W front fired and CE tangentially fired boilers are being used. The burner life varies depending on many factors. Contact Eric Schwalm, Performance Group Supervisor, at 215/933-8995.

CRYSTAL RIVER - The burner life will depend on the fuel type, the boiler design, the burner material, the excess oxygen used and erosion. Contact Pat Abbott, Mechanical Engineer, at 904/563-4407.

DALLMAN - Has an expected burner life of 18 months. For discussion of the life limiting factors, contact Mike Hohenstein, Electrical Supervisor, at 217/786-3963.

DUNKIRK - CMSI burners were installed two years ago and are equipped with removable tips and splitter tapes. Contact Bob Nichols, Maintenance Supervisor, at 716/366-2844.

ELMER SMITH - For discussion of burner life, contact Jack Mesplay, Assistant Plant Superintendent, at 502/926-3200.

ESCALANTE - The life expectancy varies with the location and several other factors. Contact Oren Key, Superintendent of Maintenance, at 505/876-2271.

59TH STREET - The B&W boilers have been retrofitted with Peabody APR burners because these burners are more efficient and perform better at low excess air levels. The old burners were still usable. Contact Tom Fisichella, Performance Supervisor, at 212/315-6733.

FOUR CORNERS - Repairs boiler burners as necessary annually. Contact Duane Pilcher, Engineering Supervisor, at 505/598-6611.

FT. MARTIN - Burner life can vary considerably depending on the life of boiler, fuel and operating practices. Contact Bob Harm, Plant Engineer, at 304/599-5010.

GALLAGHER - Boiler burners are expected to last the life of the unit. Factors that contribute to shorter life include coal/fuel oil leakage, fires, extensive slagging and equipment/burner malfunction. Contact Bill Wild, Operations Superintendent, at 812/944-8471.

GENTLEMAN - Replaces burner barrel tips due to high heat but the burners themselves are expected to have a long life. Contact Roger Henning, Mechanical Engineer, at 308/386-2441.

GIBSON - The burner barrels have an expected life of approximately six years due to coal erosion. The plant has installed ceramic lined barrels and expects a longer life with this material. Contact Cliff Barrett, Supervising Production Engineer, at 812/386-8491.

GRDA - The burners on Unit 1 lasted about nine years on the Foster Wheeler boiler and western coal is being burned. The Unit 2 boiler has been in operation about five years and the burners will probably last about the same length as Unit 1. The abrasiveness of coal, the type of operation, the potential for overheating and other problems will contribute to a shortened burner life. Contact Roger Burger, Technical Superintendent, at 918/476-5840.

HARRINGTON - Burners last 1-5 years depending upon the elevation in the boiler. The upper level burners are subject to higher temperatures, and because of this, have a shorter life. Tilt angle of the burners are also a factor contributing to shorter burner life. Contact Sam Scott, Senior Engineer, at 806/381-6216.

HARRISON - The inner barrels last about two years with a maximum of three years. The outer barrels have carbon steel liners and last about 3-5 years. Some outer barrels have ceramic liners and are expected to last 5-7 years. Hot spots will reduce the burner life. Contact Harold McKinney, Plant Manager, at 304/584-4910.

HAYDEN - Burners generally last about three years if air is maintained. Contact Bill Taylor, Technical Supervisor, at 303/276-3711.

HOMER CITY - For discussion of expected burner life, contact Russ Wingard, Senior Engineer I, at 412/479-9011.

KILLEN - Expects boiler burners to last 8-10 years. Factors that contribute to shorter life include erosion of the nozzles and the lack of cooling air. Contact Bob Young, Maintenance Supervisor, at 513/549-3911.

LOWMAN - Burners are inspected and repaired on a six month frequency. Contact John Edwards, Maintenance Superintendent, at 205/246-5746.

MADGETT - The burner pipes are currently being replaced after eleven years of service. The stainless steel ends have been distorted from heat in the Riley boilers. Contact Dan Restow, Maintenance Supervisor, at 608/685-4497.

MARTIN - Has experienced some boiler burner failures on oil-fired units at this site. High temperatures in the swirlers and shroud tubes are believed to be contributing elements. Contact Larry Wilson, Operations Engineer, at 407/597-3581.

MILL CREEK - For discussion, contact Louis Maillet, Mechanical Engineer, at 502/933-6514.

NAVAJO - The CE tangentially fired boilers now use 309 stainless steel burner tips. These burners last about three years for coal and six to nine years for air. Problems result from coal erosion and overheating. Contact Greg Benjamin, Lead Engineer, at 602/645-8811.

NEARMAN CREEK - Changed the burners to a new stainless steel material and changed operating procedures to increase expected life. These changes were performed two years ago and no problems have been experienced to date. One factor contributing to shorter life is insufficient cooling of burners that are out of service. Contact Bill Johnson, Assistant Superintendent, at 913/573-9787.

NEBRASKA CITY - A 20 year life is expected if the burners are properly maintained. Worn liner materials are replaced during each outage. Contact Andy Lagerstrom, Maintenance Engineer, at 402/873-7731.

NEWTON - The expected life of boiler burners varies, and the plant has experimented with various alloys in the burner components. High temperature and oxidation are major contributors to reduced burner life. Contact Louis Kent, Senior Mechanical Maintenance Supervisor, at 618/783-8402.

POLETTI - Repairs burners during overhauls and replaces components as required. The plant does not normally replace the burners. Contact Mike Medvec, Operations Superintendent, at 718/626-8222.

RAWHIDE - Maintenance personnel make burner repairs annually. Factors affecting the burner life include overheating and coal erosion. This unit is a tangentially fired CE boiler with tilting burners. Contact Rocky Knutson, Principal Engineer, at 303/482-2000.

ROCKDALE - The burners have a life expectancy of one year. The abrasive nature of the lignite burned causes erosion wherever the flow changes direction. The kick plates and surface hardening of the burner has improved performance. Contact Terry Easterwood, Operations Area Supervisor, at 512/446-8778.

SAN JUAN - The expected life of boiler burners varies. Warpage is the reason the burners do not last for the life of the unit. Contact Wes Lovett, QA/QC Administrator, at 505/598-7562.

SEMINOLE - Approximately two-thirds of the original burners are still in service after six years. The original welded carbon steel burners that fail are being replaced with stainless steel burners with cast stainless steel tips and the plant is currently installing ceramic line mild steel burners. The plant is selecting a consultant to evaluate the burner flames and believes that heavy slagging in burner eyebrows is leading to failure of the burners. Contact Harry Schroeter, Mechanical Engineer, at 904/328-9255.

SHERCO - Tips on the CE boilers last 2-6 years, and the two year old B&W boiler has not had measurable deterioration to date. Contact Tom Hay, Senior Production Engineer, at 612/261-3123.

SOUTHWEST - The burners in the Riley boiler have a life expectancy of 2-3 years. The burners are designed to be replaceable and are replaced due to erosion. Contact Dale Hicks, Plant Superintendent, at 417/882-5074.

SPURLOCK - The life of burners is subject to many variables including abrasion. Contact Tom Volz, Assistant Maintenance Superintendent, at 606/883-3165.

ST. JOHNS - Burner life is highly fuel dependent. The burners are not expected to last the life of the unit. Contact Al Pertmer, Senior Plant Engineer, at 904/751-7810.

STUART - The impellers last about 18 months and the burner nozzles last about 15 years. Burner water wall panels have lasted up to 20 years. Coal erosion is the primary cause for wear in the impellers and the burner nozzles and reducing atmospheres will limit the water wall panel life. Contact Dick Lunsford, Maintenance Supervisor, at 513/549-2641.

WESTON - The expected life of boiler burners is operational and coal abrasiveness dependent. Factors that contribute to shorter life include slagging, overheating, and poor combustion control. Contact Jerry Mroczkowski, Plant Manager, at 715/359-3351.

WHITING - There are three B&W boilers and the impellers have 410 stainless steel castings. These impellers usually last 2-3 years and the refractory lasts about 10 years. The burner damper assemblies have been in place for about 40 years and are still running. Contact Bruce Scherer, Senior Engineer, at 313/848-3408.